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## REVIEWS OF RECENT LITERATURE.

### ZOÖLOGY.

**Jayne's Skeleton of the Cat.**<sup>1</sup>—When Mivart's volume on the cat appeared some eighteen years ago, it was a common opinion that the high-water mark of popular scientific monographing had been nearly if not actually touched, and no one supposed that in less than two decades a work of almost twice the size of Mivart's, and dealing with only the skeleton of the cat, would be placed before the public. This imposing volume, by Dr. Horace Jayne, forms the first part of a series on the complete anatomy of the cat. It consists of an introductory chapter, in which are considered the chief divisions of the skeleton, methods of preparing bones, definitions of terms, etc., followed by an exhaustive description of the skeleton of the cat. This is arranged systematically, each group of bones being first briefly outlined and then the separate bones described in detail. After the anatomy of a bone has been minutely portrayed, there usually follows an account of its nomenclature, determination, articulations, muscular attachments, ossification, variations, and finally its relations to the corresponding human bone. Although the subject-matter of the volume is so systematically arranged that any desired reference may be quickly and easily turned to, a well-devised index of some twenty-five pages has been appended.

The importance of terminology in text-books of this character is well recognized, and in these days of revised nomenclatures one turns to a new anatomy for judgments. Dr. Jayne's book will be gratifying chiefly to the conservatives, for, as a rule, he adheres to the older names good and bad alike. In his choice of general descriptive terms he is not always happy. Thus the system of general terms, proposed in the introduction, included the tautological phrase "lateral side," a misdemeanor which is atoned for by its almost complete omission from the body of the text. Nor is the use of special terms always carried out with success. In the description of the cervical vertebræ, the vertebrarterial canal is variously called the arterial canal, the vertebral canal, the foramen for the vertebral artery, and the canal for vessels, and the only clue which the uninitiated are

<sup>1</sup> Jayne, Horace. *Mammalian Anatomy, a Preparation for Human and Comparative Anatomy*. Pt. i. *The Skeleton of the Cat*. xix + 816 pp. J. B. Lippincott Co., Philadelphia, 1898.

given as to the synonymy of these expressions is on page 55, where the arterial canal is mentioned in the text, and reference is given to a figure (Fig. 28) in which it is called the vertebral canal. This looseness in the use of technical terms, while not so serious for the advanced student, is confusing to the beginner, and, what is much worse, schools him in methods which are flagrant violations of the principles of scientific description.

Not only is there a regrettable looseness in the use of terms, but the definitions of these terms are also often unsatisfactory. Thus, in commenting on the general axes of the vertebrate body, the author tells us (p. 39) that "lines drawn at right angles to the median plane are transverse lines; lines *in or parallel with the median plane are longitudinal lines*, and lines connecting the back and belly are vertical lines," a lapse in geometry rather than in anatomy. Similar inaccuracies of definition occur also in the body of the text; for instance, on page 46, under the title "Characters Common to all Vertebræ," we are told that "each vertebra, whatever its shape, consists of two essential parts, the ventral cylindrical body or centrum, and the dorsal transverse neural arch," and on page 109 we are further informed that the typical caudal vertebra consists "of little more than an elongated body," and that it has "no neural arch." Instances of this kind lead to the conclusion that Dr. Jayne's forte does not lie in making definitions.

Aside from its defects in terminology, the description of the cat's skeleton is remarkably full and accurate. We have read much of it with a specimen in hand, and have found practically nothing worthy of serious criticism. The only real omission that we have noted is that of the relatively insignificant penis bone. In exhaustiveness this description places the osteology of the cat second only to that of the human being. As the chief object of the book is to give a full description of the cat's skeleton and not to advance a system of terminology or modify the existing ones, we must congratulate the author on his success.

The illustrations accompanying the descriptions form one of the most striking features of the volume. To say that they are numerous would be to understate the truth; they are profuse. In the description of the skull the account of each bone is usually accompanied with one or more outlines of the whole skull, on which are shown in heavy lines the limits of the particular bones considered. This method is also used for the bones of the carpus and tarsus, and as in each case the whole hand or foot is reproduced, the extravagance of

the method becomes obvious, for an outline figure covering something over eight square inches is repeated frequently to show the positions of bones often occupying not over an eighth or even a sixteenth of a square inch of surface. The method is certainly better than that of giving only a single general figure on some remote page, but it seems to us less successful and certainly less economical than that of placing the general figures on a folded sheet which, though attached to the book, may be kept in view while any page is being consulted.

Another feature of the illustrations is their size. Those taken from the cat are said to be magnified twice, except where otherwise stated, a rule for which Fig. 524 is an exception. This double magnification is generally satisfactory, for a smaller cut would usually involve the loss of some important details; but the enlargement of many figures, such as those of the lumbar (Figs. 65, 69) and of the caudal vertebræ (Figs. 79, 81), seems to us uncalled for.

Aside from the remarks on the human skeleton, almost the whole volume is written in the spirit of pure descriptive anatomy, for, although the book purports to be among other things a preparation for comparative anatomy, information of a comparative nature seems almost studiously shunned. Thus, in describing the ossification of the occipital bone, the statement is made that it arises from four parts, but not the least intimation is given that these parts are the real bony elements separate in most vertebrates and fused in the higher mammals to form the occipital bone. Other complex bones, like the innominate, etc., are scarcely better treated. Some idea of the author's conception of comparative anatomy may be gained from the statements on page 596, where the names of the carpal bones are arranged in three columns, according as they are employed by American anatomists, European anatomists, and comparative anatomists; the last, according to their column, have not as yet discovered the pisiform bone. Notwithstanding that the author chooses to ignore the many pertinent and well-established facts of comparative anatomy, he indulges without any apparent reason in a discussion of seventeen pages on the evolution of mammalian teeth, a discussion which presents only one side of an extremely complex question and which in reality is largely made up of quoted extracts from the later writings of the author's celebrated townsman, Professor Cope. Why the teeth rather than other parts should have been taken for comparative treatment is not clear. On the whole, the way in which the author chooses to deal with the comparative side of his subject is perhaps the least satisfactory aspect of the volume.

The intention that the book shall be used by those preparing for medicine has led the author to devote considerable space to the relations of the bones in the human skeleton to those in the cat. In most instances these comparisons are in every way commendable, but in one or two cases they seem to us misleading. The sphenoid bone in man is known to be formed by the fusion of some eight elements, all of which may exist as separate bones in the lower vertebrates. In the cat these sphenoid elements are not united to form a single bone, as in man, but fuse into two distinct groups, the posterior of which usually unites with the occipital bone. The cat, therefore, does not possess a sphenoid bone, though, like many other vertebrates, it has the elements out of which one might have been formed. It is to be regretted that descriptive human anatomy has so biased the author that he has been unable to appreciate this difference, but has ascribed to the cat a sphenoid which he then states is composed of two parts.

Notwithstanding what seem to us the shortcomings of the volume, the substantial body of facts which it contains will insure for it the respect of investigators, and while we do not anticipate its extensive use as a class book, we believe that it will find its way to the book-shelf of every working anatomist and to the laboratory table of many students. We need only add, in conclusion, that the publishers are to be commended for their excellent presswork and binding.

G. H. P.

**Rabbit Anatomy.**<sup>1</sup> — Dr. F. Clasen, whose article on the muscles of the shoulder and arm of the cat appeared some three years ago, has just published the continuation of his work on the corresponding parts in the rabbit. The article, which is illustrated by some ten clearly drawn figures, gives in a thoroughly satisfactory way the origin, insertion, form, and innervation of the muscles of the shoulder and arm as far as the elbow in the rabbit. It is concluded with a table, showing the innervation of the two dozen muscles described. The author reserved for a later publication the general conclusions to be drawn from his study of the shoulder and arm musculature. To teachers accustomed to use Krause's well-known book on the rabbit this article will be a welcome supplement for the parts under consideration.

G. H. P.

<sup>1</sup> Clasen, F. Die Muskeln und Nerven des proximalen Abschnittes der vorderen Extremität des Kaninchens: Nova Acta. *Abh. der kaiserl. Leop.-Carol. deutschen Akad. der Naturforscher*, Bd. lxxix, Nr. 3, 1897.